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PRELIMINARY REPORT OF THE DIAGNOSTIC VALUE OF PEPTONURIA AND INDICANURIA.*

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The following observations have been made from time to time during the past six months by the writers in order to determine the diagnostic value of the presence of the above-mentioned constituents of urine in disease, and to observe the practicability in daily practice of the methods employed to detect their presence. It is our purpose to continue on a more extended scale the observations here begun.

The specimens of urine studied were taken mostly from the medical wards of the Presbyterian Hospital. Through the kindness of Dr. Abbott the resting was in the main done in the Hygiene Laboratory of the University of Pennsylvania. Our appreciation of the aid of the resident physicians, Drs. Arnold, Swan and Johnson, is hereby acknowledged.

I. Tests.—Von Jaksch (a) gives two methods for testing for peptone in the urine. The first, that of Hoffmeyer, is far too complicated and is not, therefore detailed. The second, the "Devoto method," is given as the best, and is the one here used. The principle lies in the exclusion as far as possible of all other albumins. It is as follows: Take 200 to 300 c.c. of urine, to which add pure crystals of ammonium sulphate in proportion of 80 grammes of the sulphate to 100 c.c. of urine. This solution is placed in a beaker in a boiling-water bath for one-half an hour, when the greater part of the salt should be dissolved. It is then steamed in Budenberg's steam sterilizer for another half-hour, the vapor being kept at 100 degrees C. By this procedure, all proteids (serum albumin, globulin, hemo-globulin, deutero-albumose, peptone, nucleo-albumin—i. e., mucin) are precipitated; but the serum albumin and globulin and nucleo-albumin are thus the only thoroughly coagulated bodies, the hemo-globulin being only partly coagulated.

After this last heating to 100 degrees C. filter at once. The filtrate should be straw-colored and free from albumin, as indicated by boiling or the potassium ferrocyanide (1) tests. A slight cloudiness appearing with the ferrocyanide test does not necessarily imply the presence of albumin. A decided turbidity or precipitate would be due to a proto-albumose, or, more probably, hetero-albumose. Should the hot filtrate be cloudy or give the proteid reactions, the investigation has miscarried and must be repeated from the beginning. The residue is washed first with hot, then with cold water. The resulting filtrates show a more or less decided brownish tint. These are collected, and to one portion of the fluid acetic acid and potassium

*Read June 13, 1894, before the Philadelphia County Medical Society.

——(a) Clinical Diagnosis, p. 255.

(1) This test is as follows: Urine is filtered and then acidulated with acetic acid. Then add a few drops of a 10 per cent. solution of potassium ferrocyanide. If the urine becomes turbid it shows presence of albumin.

ferrocyanide solution are added to test for albumi. Should no result be obtained the biuret test is performed with a portion to which caustic soda or other alkali has been applied in excess. Any albumin shown to be present is certainly peptone.

The filtrate from the hot washings may exhibit it, but it often happens that the peptone first becomes recognizable with the biuret test in the filtrate derived from the cold washings.

Several specimens, both of the hot and cold washings, may be tested until a positive result is obtained.

The test for peptone is, therefore, at best very delicate and requires much time to work out. The biuret reaction is that by which the color test (for such it is) for the peptone is obtained, as inferred from the above. It is as follows. Urine: Add caustic potash, caustic soda, or ammonium hydrate in excess; then add, drop by drop, solution (10 per cent.) of copper sulphate. If albumin be present the resulting peroxide of copper (a green precipitate) is dissolved, and the fluid assumes a reddish-violet color.

Peptone strikes red, not violet, in the fluid. As this reaction is probably not familiar to many, the color produced is here exhibited (and in a less intense degree than it is usually found in peptonuria experimentation) by adding albumose, containing peptone, to the test (2).

The test for indican is much more simple, and, as given by Strumpel, (3) is as follows: "We mix equal volumes of urine and officinal hydrochloric acid (P. G.), and then add, drop by drop, a concentrated solution of chloride of lime, shaking it after each drop is added. If the urine contains much indican, a decided indigo-blue color appears." To this may be added, that the test can be brought out more clearly, chloroform, then agitating. After standing, it will be found the chloroform at the bottom of the tube will be colored violet or bluish.

2. Origin of Peptone.—In health peptone is produced in the blood by the act of digestion. We know that the proteids ingested are transformed into peptones in the stomach and intestines. The peptone is reconverted into proteids in the circulation. Peptonization is, therefore, the sine qua non for absorption of proteids. In health the peptone is immediately transformed on entering the blood, hence the reason for the statement of physiologists that "peptone is not found normally in the blood or urine."

The occurrence of peptones in the blood or urine in disease would show over-production or a lessened power of the system to assimilate it.

G. Bjorkman's (4) excellent paper throws out some suggestions as to the rationale of peptonuria. He says: "If we regard the chemotactic influence upon absorbed peptones as the reason for such increase in the number of white corpuscles during digestion, many obscure mysteries in the physiological phenomena of absorption will be cleared up."

From the above statement we can infer that an excess of peptone, because the digestive and absorptive power of the white blood-cells are impaired, is carried off as waste in the urine.

The leucocytes multiply for defnse in septic and other hemolytic cases, and some become pus cells, undergo degeneration and furnish increased peptone in the blood, which is then carried off in the urine.

3. Origin of Indican.—Indican is found normally in the urine in small amounts. Chemically indican is indoxysulphate of potassium and is colorless, but on adding strong acids or oxidizing agents indigo is set free, producing a blue color.

Its origin in health is hardly established.

In disease indican is likely formed from indol, a product formed in the small intestines by the decomposition of albumin and other substances under the influence of bacteria.

4. Clinical Significance of Peptonuria (i. e., excess of peptone.)—As before stated, peptone is not found normally in the blood or urine. It cannot, at least as yet, be detected so frequently or easily in any case as serum-albumin. Peptone is especially found in the urine, according to von Jaksch and other authors, in septic conditions, and under all circumstances where pus is formed in the body—e. g., tubercular cavities, as in the lungs, abscesses, etc.

Von Noorden, however, in his recent

——(2) Showed test-tube with reaction.

——(3) A Text-book of Medicine, p. 408.

(4.) "The Physiological Role Played by the Leucocytes," American Medico-Surgical Bulletin for January, 1894.

work, Lehrbuch der Pathologie des Stoffwachels (Berlin, 1893), does not think peptone is found in the urine. On the other hand, Robitschek has recently done some experiments for von Jaksch. An abstract of their work appears in The Practitioner for June 4. These authors lay stress upon "The Significance of Peptonuria."

5. Clinical Significance of Indicanuria (an excess of Indican).—Osler (5) gives, under the head of "Anomalies of the Urinary Secretion," some eighteen substances that may be found in abnormal urines. Some of these are detected in small amounts in health; others being considered always as abnormal, so far as is known to-day. He further states that indican, when in excess in the urine, often denotes "chronic constipation or ileus."

Strumpell (6) refers to the same thing, as does one of the authors (7). Indican is also said to exist in some cases that are on a strict milk diet; in wasting diseases, especially if secondary to gastro-intestinal diseases; in peritonitis and empyema, and especially where large quantities of albuminous matter are undergoing rapid decomposition in the intestinal tract. On the contrary, in catarrhal jaundice and in cirrhosis of the liver some clinicians say it is found in very small amounts only. Indican may be thrown down before the urine is voided, but usually, when present, is found after that secretion cools outside the body.

The following observations here tabulated, (8) as to peptone, indican, albumin, and uric acid in the urine, of the total number of specimens examined are too few in number to base conclusions of a definite character. As to peptonuria and indicanuria, they support in the main the foregoing statements.

We were engaged at the time in studying the urine of cases of typhoid fever. We take this opportunity of presenting the results of the examination for peptone and indican in this disease. Thus in twenty-two experiments in twelve cases of typhoid fever fair reactions for peptone were obtained in three cases only, while the indican test detected that substance in excess in sixteen out of the twenty-two tests.

In one of the three cases there was a large number of boils, which accounted for the peptonuria. In the other two no foci of suppuration could be found. Such focus was probably present.

Conclusions: 1. It can be said that peptonuria does not occur in typhoid fever in the natural course of the disease.

2. Its presence would point to some area of suppuration.

3. Indicanuria is common to typhoid fever, and indicates the continuance of an intestinal putrefaction. May it not be possible in cases of typhoid fever, with a febrile course continuing after the specific symptoms have subsided, to determine by this test whether the said fever is due to the persistence of intestinal lesions or to a remote process? And the absence of indicanuria, therefore, point to the removal of any intestinal complication?

The number of cases other than typhoid fever examined were forty-five. Many specimens were repeatedly examined as checks, making in all seventy-two tests, not including the typhoid cases.

We shall not burden you with the reading of the long tables here shown, but simply summarize the disease and findings under each head.

1. Cases with absence of peptone in the urine.—There were twenty-one cases out of the forty-five cases examined in which no peptone reaction was found.

Five out of the twelve known septic cases contained no peptone in the urine. In two of these cases, of old well-draining tubercular sinuses, the pyogenic membrane probably acted as a dam, producing for practical purposes local diseases, not affecting the system, as a dyscrasiae.

The one appendicitis case (out of three tested) not having peptonuria was of mild type and recovered without event. There was no generalized morbid process.

Among the remaining cases where no peptone was found in the urine were those of various diseases in the medical wards, mostly doing well, such as corneal ulcer, supposed abscess of groin (proving on operation to be a dermoid cyst), hysterical hemiplegia, septic stump (making a rapid recovery), hysterical hemiplegia, influenza, articular rheuma-

(5) The Principles and Prac., of Med., p. 772-737.

(6) A Text-book of Medicine, p. 408.

(7) Medical Diagnosis, p. 331.

(8) Showed detail tables as to peptone, indican, albumin, and uric acid findings in—I. Typhoid-fever cases (12). II. Miscellaneous diseases (33). III. Known septic cases (12).

tism (subacute), bronchitis, hysteria, chlorosis.

Cases in which no peptone was found in the urine:			
Appendicitis	1	Rh'matism (articular)	1
Bronchitis	1	Rheumatoid arthritis.	1
Bright's disease (mild)	1	Sciatica	1
Chlorosis	1	Septic stump (rapid recovery)	1
Catarrhal gastritis	1	Septic condition of groin (proved to be dermoid cyst at operation)	1
Corneal ulcer	1	Tubercular bone disease	2
Epilepsy	1	Total	21
Hysterical hemiplegia.	1		
Hemiplegia (organic)	1		
Hysteria	1		
Influenza	1		
Pleural effusion (slight)	1		
Pneumonia (mild)	1		
Neurasthenia	1		

2. Cases with the presence of Peptonuria.—All the cases in which suppuration was known to be present had peptone in the urine except two. Of the two out of three appendicitis cases that showed peptonuria one recovered; in the other perforation took place. Operation was done, finding much pus, the patient dying of septic peritonitis.

In all of the forty-five cases (excluding the ten septic ones) peptone was found among the miscellaneous diseases (thirty-three) in twenty-four, such as Bright's disease, pneumonia, pyothorax, pulmonary tuberculosis, chronic valvular disease of the heart with extreme anemia, pleural effusion and in such diseases where there was destruction of the blood cells.

Cases in which there was peptone in the urine:	
Anemia (extreme)	1
Acute general dermatitis	1
Appendicitis	2
Bright's (chronic)	1
Chronic valvular heart disease with anemia	1
Gelatinous arthritis knee	1
Pneumonia (severe type)	2
Pleural effusion (marked)	1
Pyemic or septic cases (out of the 12 examined)	10
Typhoid (covered with boils)	1
Tuberculosis	3
Total	24

In the case of septicemia with retained secundines in which there was also marked reaction for peptone there was extreme leucocytosis, the blood estimation revealing the following: White blood-corpuscles equals 49,966 to c.mm.; red-blood corpuscles equals 3,925,000 to c.mm.; hemoglobin, 43 per cent. This is confirmatory evidence of what takes place in the blood in septic conditions. It may probably, a priori, be that leucocytosis is generally found to accompany peptonuria. With this cell disintegration, too, according to Victor Vaughan (9) and others the corpuscle nuclei being destroyed furnishes xanthin and uric acid in excess in the urine.

3. Cases in which there was little or no Indican in the Urine.—Out of the forty-five case of miscellaneous diseases (thus still excluding the twelve typhoids already classified) formulation of the findings is as follows:

a. In thirteen diseases, including epilepsy, Bright's disease, hemiplegia, pneumonia, tuberculosis and rheumatoid arthritis,indican was entirely absent on only the faintest blue color was produced which was then assumed as physiological.

Cases in which there was little or no indican in the urine:	
Of the pyemic cases, 4:	
Abscess (buttock)	1
Infected wound	1
Tubercular bone disease	2
Miscellaneous, 13:	
Amputated stump	1
Arthritis (rheumatoid)	2
Arthritis (gelatinous)	1
Bright's disease	2
Corneal ulcer	1
Epilepsy	1
Hysteria	1
Pneumonia	1
Neurasthenia	1
Tuberculosis, lungs (incipient)	2
Total	17

4. Cases in which indican was present in very appreciable to marked amounts in the urine.—We found indican in twenty-five of the forty-five cases examined (excluding again the typhoids).

In general the diseases included pleural effusion with intestinal catarrh, catarrhal gastritis, nervous dyspepsia, and all three appendicitis cases from a good to marked reaction.

Indican was also found in excess in the case of cancer of the uterus. When thus found in the urine in local cancer indican may be of value as showing secondary nodules in the intestines, or at least deficient and altered functionation produced by the malignant disease.

Indican was also found in the urine of the case of septicemia from retained secundines. Here the close proximity of the focus of pus to the intestinal tract most likely was the cause of the fermentation in the gut.

We were unable to obtain any cases of intestinal obstruction for examination during the time of making these studies.

Cases with indican prsent in excess in the urine:	
Abscess (psoas and iumbar near intestinal tract)	3
Appendicitis	3
Acute dermatitis (bowels torpid)	1
Anemia (extreme) with constipation	1
Articular rheumatism	1
Chronic valvular heart disease with subacute intestinal catarrh	1
Chlorosis (with constipation)	1
Cancer, uterus	1
Catarrhal gastritis	1
Dermoid cyst	1
Hysterical hemiplegia	1
Hysteria, anemia and constipation	1

(9) "Nuclein and Nuclein Therapy," Journal of the American Medical Association for June, 1894.

Hemiplegia (organic) with constipation..	1
Influenza	1
Pneumonia	2
Plural effusion	1
Retained secundines with intestinal torpor	1
Sciatica	1
Tuberculosis	1
Typhoid (covered with boils and hence included in pyemic cases)	1
Total	25

5. Association of Peptonuria with Indicanuria—The two were found together in a large number of the cases in which either compound was detected.

Peptone occurred, as stated, in the large majority of septic cases (10).

Where there was extreme emaciation, with intestinal symptoms as an especially prominent etiological factor, indican was found in the urine in excess.

The relation of indicanuria with peptonuria depends on two things mainly:

a. If the septic or other irritating condition is localized in the gastro-intestinal tract marked indicanuria is detected:

b. If the general system becomes involved in the albuminous compounds, destruction, then peptone is formed in excess in the blood and hence thrown down in the urine along with the excess of indican.

Peptone depends on changes really in the system.

Indican depends on fermentations really outside of the body (in the gut.)

Thus depending on general cell destruction and elimination of the sub-oxidized proteid product, or on local intestinal fermentation being prominent, will peptone or indican be found in excess in the urine.

If the local and systemic conditions exist together as described, then we may expect to find both products in the urine. Then, too, the indication is of more serious disease.

6. Association of Albumin with Peptonuria and Indicanuria,—In the specimens of urine in which albumin was found it was due to a definite cause, as in Bright's disease or pyuria, hence in these experiments albuminuria bore no relation to peptonuria or indicanuria.

7. Likewise there is negative result in these few experiments in comparing the frequency of excess of uric acid with excess of peptone or excess of indican in the urine. The long-accepted theory of direct relation between uric acid and urea is now overthrown.

It would be, therefore, of value to test more extendedly for the relation of uric acid (known now to be produced from cell nuclei destruction) to peptonuria and leucocytosis. A great field is open here

Finally, the trouble and time taken to do this work thus far proves it not to be very practical.

But if one had the opportunity and time for such investigation of cases important indications would undoubtedly be derived.

(10) The liability to inaccuracies in the work creeping in must be considered in excluding peptonuria from two septic cases.

USE OF THE ABDOMINAL DRAINAGE-TUBE DETERMINED BY BACTERIOLOGICAL EXAMINATION.

By C. B. PENROSE, M. D.

The subject of drainage in abdominal surgery is one about which there is still great difference of opinion, though this difference is much less than it was only a few years ago. Some operators never used drainage at all after any operations, and yet obtained exceedingly good results; while others obtained equal results, and their statistics showed that they employed drainage in a proportion of their cases, which varied, according to the individual taste of the operator, from 5 or 10 per cent. to 75 per cent.

The general advice given by the advocates of drainage was "when in doubt, drain." It was in this element of doubt which caused the diversity of practice. The doubting operators drained the most. Everything which increases our knowledge in regard to the facts which determine drainage diminishes our doubts and brings about more uniformity of practice.

We drain the abdomen for two reasons —for hemorrhage and for septic material. As the experience of the operator increases and his skill in enucleating tumors becomes greater he has less hemorrhage and, other things being equal, he drains less. Our methods of controlling hemorrhage in abdominal operations are better than they were a few years ago, the Trendelenburg posture enabling us to check bleeding from small vessels in the bottom of the pelvis, which before the introduction of this

position required drainage. The operator who enucleates pelvic tumors with two fingers and closes the abdomen without seeing what he has done will necessarily have much more doubt in regard to hemorrhage and will use the drainage-tube much more frequently than the operator who inspects the field of enucleation before closing the abdomen.

The second reason for drainage is the septic character of the material which escapes or is retained in the abdomen. Knowledge in regard to this fact is of great value in deciding about drainage in any case.

During the past winter, at the University Hospital, an immediate bacteriological examination has been made of the contents of every tubal or ovarian tumor which was ruptured during removal. And the report of the pathologist in regard to the septic or the aseptic character of the contents has determined my decision in regard to the use of the drainage-tube.

I, unfortunately, have no record of the total number of cases in which such examinations have been made; but the results have been exceedingly satisfactory, for out of a series of 46 coeliotomies, in which drainage was used but three or four times for hemorrhage, and only once because the microscope showed the material which escaped into the abdomen to be septic, there has been no case of peritonitis or sepsis.

The tubal contents in most cases of salpingitis are sterile. Shauta (Archiv. fur Gynecologie, 1893, No. 44) reports 192 cases of salpingitis, in 144 of which the contents of the tubes were sterile, in 33 there were gonococci, and in 15 streptococci or staphylococci.

Before I began to use this method of bacteriological examination I inserted a drainage-tube in every case of tubal and ovarian abscess where the contents escaped into the peritoneum. Now I neither irrigate nor use the drainage-tube unless the microscope shows these contents to be septic. The presence of gonococci in small numbers does not necessitate drainage. Recently the value of this bacteriological examination was illustrated by two cases operated on consecutively. Each woman had a tubo-ovarian abscess, caused by sepsis at labor. In each case the abscess was ruptured during removal, and the pelvis filled with pus. In the first the pus was found to be sterile, and I closed the abdomen without irrigation or drainage. In the second one pus contained streptococci and staphylococci and coli commune. Consequently, the pelvis was thoroughly washed out and drained.

Both women recovered without peritonitis or sepsis, though the convalescence of the first was very much easier than that of the second.

The examinations have been made for me by Dr. Beyea. Cover-glass preparations of the material to be examined are made and are fixed in the flame of an alcohol lamp, and stained with carbol-fuchsin. The microscopic examination is made with a Leitz 1|12 immersion lens.

The examination is quickly and easily made, and I think that no operating-room is completely equipped without facilities for such bacteriological examinations. They furnish us with scientific data from which we can determine the propriety of an important surgical procedure, which otherwise depends upon the whim or prejudice of the operator.

CINCINNATI OBSTERICAL SOCIETY.

MEETING JUNE 28, 1894.

DISCUSSION.

Dr. R. B. Hall made a report of four cases of typhlitis.

Dr. Bonnifield—Mr. President: I had a case of appendicitis last winter that I had intended to report systematically at some time, but the last remark of Dr. Hall causes me to report it now. The patient was a boy ten years old whom I was called to see Christmas morning. He went from bad to worse, and in twelve hours had a general peritonitis; pulse about 130, and could not retain nourishment or food of any sort. Dr. Forchheimer was called in consultation. We discussed the advisability of operation, but neither of us were very much in favor of it; I in particular was not. At any rate, it was postponed until the next day, when we got his bowels to move. He then began to retain nourishment, and in about four days he was convalescent, and in a week I did not think it necessary to see him for a few days. When I came back I found a temperature of 101 degrees, and this continued about a week. I made an examination for pus, but I was unable to feel anything through the abdomen or the rectum, and with nothing but the high temperature to indicate it I did not feel justified to make an operation. There was some pain over the liver, but not very marked. About twelve days later his temperature ran up suddenly to 104 degrees; I was telephoned

for, and just as I got to the house they told me he had a very severe spell of coughing. I went up to his room and found he had been discharging pus through the lungs. His temperature then fell, and in a week it was normal. In the face of the acute general peritonitis I do not think operation would have been justifiable.

After the temperature continued high I would not have explored the liver, and think probably the abscess was above the liver. The liver was not specially enlarged at any time. Opening the abdominal cavity would simply have made it worse.

Dr. Hall—"What was the diagnosis of the first attack?"

Answer—"Appendicitis."

Question—"Could you outline a tumor?"

Answer—"The colon seemed to be filled with feces; you could map out an area of dulness."

Question—Your diagnosis was correct, I presume; what was the action of the abscess?"

Answer—"Acute general peritonitis."

Question—"Septic in character?"

Answer—"I do not think it could be called a metastatic abscess."

Dr. Palmer—"His marked improvement was after the discharge of a quantity of matter?"

Answer—"Yes, sir."

Dr. Johnstone—Mr. President: This is very interesting, and the one point I am glad to hear brought out and special stress laid on is not to operate while the intestinal canal is stretched to its full extent. I do not think any man is justified in making a laparotomy under those circumstances. One case of appendicitis, which some of the gentlemen present saw with me, turned out to be just a common colic caused by the fellow eating apples. No appendix was found, but the man got perfectly strong and well. I believe sometimes the appendix may slough out through the bowel and a chronic peritonitis left, which may be caused by an exploratory incision. In this case no appendix could be found. The colon was laid open from the ileocecal valve to the head; there was a blotch of cicatrices everywhere, and we had to separate a number of them. After I had gotton back it seemed as if we were going into the normal parts, and I stopped. There seemed to be some accretion, but this I found to be only the contents of the bowel. I took the drainage tube out about the second or third day, and the serum poured for about a week. He came back in a few weeks and I did not know him; he said he had earned the money in a brickyard to pay for the operation.

My first operations in this line were upon two negroes down South. They were close together, and are living to-day. I have seen men who no doubt had one attack of appendicitis; everything was asked to make the diagnosis perfect, and they are well to-day; so, I am not prepared to go to the same extent the New York Academy does. But the second attack always calls for operation. It is then time for us to go to work. If the first attack is mild I think it is safe enough without operation. I had an experience with a little girl, aged thirteen, who had menstruated her second time and completed it one Wednesday. The following Sunday she had jumped the rope, and had some pain, but did not call the doctor until the following Wednesday. I saw her about 1 o'clock and ordered her to the hospital. I found she was in shock, the temperature below normal, (about 98 degrees), and I ordered a cathartic. The next morning the temperature had risen a little, and I saw the child was going to die unless something was done. I made the effort, simply going through the abdominal wall, and I found a lot of feces, enteroliths, etc., and she died that afternoon. In these cases the gas must be removed before the patient is safe, and the whole question simply resolves itself into whether it is easier to do this before than afterward. I do not think it is safe to cut into the abdomen in any case before this is done, except in cases of stab wound.

In the first laparotomy of my old assistant, down at Danville, the case was caused by the blow of an ax handle. In that case the bowels continued distended, and it was perfectly apparent that unless something was done the child would die. I assisted him in opening the abdomen, and we found nothing but a dry peritonitis and an enormously distended canal. When the intestines were gotten out we could not return them without opening them, and so we made an eighth of an inch opening in the intestinal canal and let out all the gas feces we could possibly get out that way. He made a beautiful recovery, which I think was due to the drainage. The introduction of the drainage tube started the serum to flowing, and it just poured for several days. In proportion to the pouring of the serum was the improvement of the child. Of course the difficulties of peritonitis we know. We often find these cases with adhesions. I do not think the appendix is put there for nothing, but that it is after all only a hollow lymphatic gland; it is simply a single continuous Peyer's patch, and the volume of the serum I think is increased. It is there, and I do not think we have a right to take it out every time we find it.

In the last year I have had the appendix in my hands three times, and several times have had to ligate the adhesions and take them away. Now, when the appendix is perfectly normal, except from inflammatory hands which have come from the tubes and ovaries, I cannot understand why we should consider it necessary to remove it. I saw a normal appendix exhibted in the New York Academy, taken out just because the gentleman had his hand on it. I do not think we should hunt for the appendix in cases of abscess. In the case I had within the last week or ten days a large abscess of the ovary had been discharging through the ali-

mentary canal. It had continued a year or two. I got the ovary out, but could not get the tube out without wounding the intestines. I expected to curette the case afterward. I found the sinus had gone down to the broad ligament, and then out into the intestine. It has made an uninterrupted recovery. I think, when we find the thing we are after, to save the life of the patient we ought to quit, and that is a law we ought to follow more closely. My old professor used to say: 'Boys, don't muss and muddle; don't go too far, because evry time you touch an intestine or break an aanesion you add that much to the risk, and the thing to do is to do as easily and smoothly as possible the one thing you go after, and leave the rest alone."

Dr. Wenning—Mr. President: I have not had any personal experience, and came just to learn, but one remark of the last speaker brought a query to my mind: whether in some cases with accretion, instead of removing the appendix would it not be possible by pressure to force the substance into the main gut, and leave the appendix alone? I have not my mind definitely made up as to the proper treatment of these cases. Certainly the medical aspect has something in its favor. I am sure many cases are cured by medical treatment, and before we determine what is the proper line of treatment we ought to listen to the medical side. I would like to hear Dr. Cleveland's view on this question.

Dr. Cleveland—My opinion, based on my own limited observation, is that the majority of cases of appendicitis get well. I think very likely every practitioner has a number of cases of appendicitis, and it is only now and then that was operated upon. In one case it sistance to operate for us. In fact, in 25 years I have never had a case that we operated upon. In one case it would have been very fortunate had I called in a surgeon, but in that case I did not fully realize what I had to deal with until it was too late. I can recall some three or four cases that have entirely recovered without operation. The statement has been made by experienced men, and I do not doubt it, that when the appendicitis appears more than once it is probably well to operate. While I am not in a position to contradict that, still I am of the opinion that frequently even these cases get well without operation. One case especially, which I have in mind a man probably about 35 years of age, has had some three or four distinct attacks of appendicitis. At one time I advised an operation, but after a series of weeks he recovered.

He simply had an acute attack of pain, a localized peritonitis around the region of the appendix, and it lasted three or four weeks. It was not like the fever we have when pus is present, and if there was any pus I did not discover it. He is now perfectly well and doing his work. I had another case, which occurred in a woman, showing that these cases may be cured sometimes by simple puncture. She had one or two attacks of appendicitis, and I wanted her to be operated upon—insisted upon it, in fact, because I thought otherwise she would die. After two or three weeks the peritonitis, not becoming general, I could feel a fluctuating tumor, and I was so well satisfied that I felt justified in sticking a knife into it without saying anything to her about it. Afterwards I increased the opening and washed it out. I mention this case to illustrate an experience which I expect others have had, namely, that the appendicitis has softened in some cases, so they have thought best to stick a knife into it. I have had another case that resulted in the same way. Our judgment in these operations is to a large extent influenced by what we see. The general practitioner only sees the cases which come under his own observation, while the specialist sees not only his own but also the cases coming under the care of others. I feel satisfied from what I read regarding the operations in the East that they are certainly carrying things too far and operating too freely. Notwithstanding these patients usually recover, I do not think it an easy operation by any means. The point I would make is that the majority of cases of appendicitis get well under the medical treatment, and only the serious or worst cases come under the observation of the laparotomists.

Dr. Johnstone—I remember, while practicing in Kentucky, I went down in the mountains, in that ignorant, Egyptian land, and I found a patient who was not only pregnant but had a large lump in the groin. They would not let me touch it, and I returned home. The doctor wrote me in three or four months the result. She got well, but with the thigh drawn up. She would not let him touch it, and it dissected away up the side and down the thigh, and it discharged about two gallons of pus. At the time of her confinement the leg was drawn up in such a position that it was difficult to get the child out. This illustrates how nature will sometimes bring these patients through, but with what deformity? When cases have the second and third attack of appendicitis the percentage of recovery is very greatly reduced. But we find it is safer to operate than to let the patient alone. I think a man is a simpleton not to go ahead and operate.

Dr. Hall: Certainly no man would take off an appendix which was healthy unless he resided in New York. I have frequently pulled them off from adherent pus tubes or suppurating ovaries and pushed them out of the road. I simply pulled them off as I would an adhesion with any other organ, as a coil of the intestine, for instance, and let it be. I removed one appendix, however, that was fairly healthy, except it was adherent to a large fibroid tumor. I have reported this before. I did not recognize it as the appendix, but mistook it for a

vessel. I put it in a clamp, because the blood from it squirted over my head. The patient recovered. That is the only time I have ever been guilty of removing a healthy appendix. I think the suggestion by one of the speakers, of pushing the accretions back into the gut, is a very problematic one. In fact, in all these cases that we are called upon to operate there is an inflammation actively going on, and the narrowest calibre is to be found where the appendix joins the gut. In the first case reported the physician had several foreign bodies in the appendix. There was a sort of cartilaginous portion near the intestine, through which there could be found no hole whatever, and I think it would have been perfectly safe to have cut it off without any ligature whatever.

I will grant if such a thing could be done it would be perfectly safe to do so, but I think we would very rarely find a suitable case. I have never considered the question to any great extent, but it has never occurred to me that that would be a good way to treat these cases. In reference to the medical treament, I think we all agree with Dr. Cleveland, but I think we should get together, and medical men should refer the cases for operation before they reach the autopsy table. After they have had a second or third attack, especially if those attacks occur at short intervals and are severe, there should be no question about operation. I believe they should all be operated upon. I have the record of a case, however, which has recovered now five or six years after the ninth attack in two or three years. The patient learned to lead an invalid life, because exercise would bring on the disease, and nature cured the case without operation. I have the complete records of one case that had seyn or eight exceedingly mild attacks, and then had an exceedingly severe attack and went to the graveyard. When I saw her it was impossible to count the pulse, and she died in an hour or two afterward. I have not reported these cases for the purpose of drawing a line between those cases which should be operated upon, and those which should not be operated upon, for I consider that each case is a law unto itself, and the party having the patient in charge must be the judge.

Dr. Cleveland—"How young a child can have appendicitis?"

Dr. Hall—"I have operated upon one nineteen months old."

CHANGE IN DATE.

The Medical Publishers' Association meeting will be held August 13 and 14, instead of 14th and 15th, at Hot Springs, Va. A large attendance is expected.

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FRANK S. PARSONS, M. D.,

EDITOR AND MANAGER.

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Address all communications to

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PHILADELPHIA, AUGUST 11, 1894.

MISSOURI'S SHAME.

During the past month the American profession was suddenly startled to learn, through the medical journals and the lay press, that in the city of St. Louis a practitioner was moved by scruples of conscience to raise his voice against the wholesale slaughter of women, which is being carried out in that city in the name of surgical operations (?)

Dr. O'Reilly appealed to the City Board of Health to suppress this modern laparotomy craze, which has swept over that section of the country of late. He alleged that the mutilation and the dreadful mortality which followed those cases imperatively demanded State interference; that the common practice in vogue there was little less than criminal and murderous.

The St. Louis Medical Review, July 28, 1894, says for its stigmatized fraternity:

"The fact of the matter is that Dr. O'Reilly is right, that operations on the abdominal and generative organs are

daily performed for which there does not exist the shadow of a justification. There is not a man in the medical profession who is not aware of the existing evil. Everybody that has any knowledge about the extent of this crying evil of the day condemns it.

"And the remedy? We doubt that there will be one in the near future. To us this lamentable state of affairs seems to be the immediate outgrowth of the recognized cancer of the body medical, the multiplicity of medical colleges and consequently a multiplicity of individuals who style themselves professors of surgery. Anybody that has a superficial knowlldge of the mental calibre of some of these 'professors' will know how it comes that the student's mind is filled with heroic notions about surgical daring, even where the daring amounts to criminality. The fact is that too many pseudo surgeons occupy professional chairs who have as much calling for this vocation as the mule has for the performer on the piano. The introduction of asepsis is to blame for it. Being in itself one of the greatest boons for humanity it has placed a formidable weapon in the hands of many unscruplous imbeciles. The euphonious appellation of 'exploratory operation' covers a multitude of surgical sins and incapacities. The flippant manner, too, in which some of these worthies speak to the students about their mistakes and the insignificance of human flesh when the 'science of surgery' comes into play has a debasing influence on the juvenile mind. Formerly there were master surgeons who did not consider it beneath their diginty to serve in their youth a long and laborious apprenticeship in the principles and practice of surgery. This was in the pre-antiseptic and pre-aseptic period. Nowadays the young man who has had the misfortune of absorbing and appropriating the teachings of the class of surgical fakirs, the pseudo-professors, will leave the college with the firm determination of operating on the first case of appendicitis, pus-tube or ovarian tumor that presents itself."

We fully agree with the writer of the above, that the "professor" fakir is in part responsible for this, and that the fallacious claims of antisepsis and asepsis have lent their aid in this human slaughter, which it is about time the State authorities promptly and sternly suppress.

But there are other factors in operations.

Perhaps, under certain circumstances, we might excuse, with a sharp reprimand, the ambitious, visionary young enthusiast for his first offense; but, when the crafty, experienced practitioner suddenly casts aside legitimate remedies and stalks forth with the crimson blade in hand, promising every woman a sure cure, through laparotomy, it is time that that man was placed in permanent quarters under lock and key.

"Laparotomists and abdominal surgeons!" Where is there a town that has not one or more of these fixtures?

But to Missouri; she has sown the wind and she is now reaping the whirlwind. She is the hotbed of medical anarchy. Her once honored and influential State Medical Society, we are informed, has gone to pieces. She has only fifteen medical colleges, and at the annual meeting this year but seventeen members answered to the roll call.

A practitioner in that country, it seems, must be a professor or nothing, and surgery has run mad there. An instance came to our knowledge of this in early spring.

As the story goes, an old lady of means was stricken suddenly with mortal apoplexy. The family physician informed the family that she could not survive the night.

A few hours later, when he again called, he was surprised and horrified to meet a recently much-advertised "professor" on hand, with his steaming aseptic rig sizzing away.. Why, what was there more simple. A blood-clot had lodged in the brain and he proposed to trephine and remove it.

Happily for the poor. unfortunate woman, before his techinque was fully prepared and he was ready to undertake his murderous design, she expired.

Yes! crime it is, and hereafter the surgeon who opens a woman's abdomen for any purpose whatever, without the full assurance and approval of an experienced practitioner, and then only afted all other tentative, conservative and constitutional measures are faithfully tried, should be held strictly to account for his conduct.

This equally applies to all major operations.

Let the State of Missouri then awaken

to a full realization of her responsibilities and duty to her citizens and to the profession; let it be better understood that competent surgeons are only possible after a thorough pupilage, a broad education, extensive experience, a familiarity and knowledge of all the latest as well as the ancient and mediaeval in surgical literature, coupled with innate genius, ample opportunities to witness the most celebrated operations; and last, by an abundant and varied hospital experience.

Correspondence.

OUR TRIP THROUGH THE ROCKIES.

Beautiful, healthful Missoula—nestled among the undulating foothills of the Bitter Root, and backed by the jutting spurs of the Rocky Mountains—the most beautiful spot of a territory made up of garden spots, one would naturally think of it only as a place to keep awake in, so much is there to please both eye and ear, to encourage healthful exercise, to condemn indolence, to discourage apathy; and yet, strange as it may seem, I am going to command Missoula as the one place of all others to sleep in—to suggest it as the mecca for all who suffer from that most distressing of complaints—insomnia. A bunch of contradictions, you will say, and so it would seem on first reading; so would it seem on your first introduction to Missoula. But from no hasty judgment, wait till, like me, you have been tempted to climb these gently sloping hills to some vantage point, from which you can drink in the beauty that surrounds you, and then but inspired for deeped draughts, till you have climbed higher and higher still, all unconscious of fatigue in this pure bracing mountain air, and, at last, approaching evening find you miles away from the roof under which you are to court "tired nature's sweet restorer"—balmy sleep. Then as with still reluctant feet you retrace your steps, consciousness of self begins for the first time to assert itself in the form of two practical reminders of your existence—a growing appetite and the desire to rest. Back again to the town, the first need satisfied, and once under the blankets, made necessary even in summer by the cool mountain breezes—"tired nature" sings its own lullaby, and before you are conscious or unconscious of the fact you are asleep.

A word about how I came to be dropped into this garden spot of Montana—for "dropped" I was—with other delegates from the East. I started from Philadelphia to attend the meeting of the American Medical Association at San Francisco, California. I say "started," for when at last I reached the Golden Gate the convention had long since adjourned, robbed in its deliberations of at least one medical light.

Armed with the usual journalistic "by courtesy" I had taken my way over the Northern Pacific Railroad, intent on reaching my destination as soon as possible. Like other travelers, I could not fail to be interested as well as gratified at the surprising growth of the towns along this great railroad system. Nearly every branch of industry had planted its standard in these western towns, all of them fostered by the railroad itself, and all in turn destined to repay its fostering care. After many striking and pleasing incidents of travel Montana at last was reached, but here nature in the form of floods, the result of melting snow from the snow-capped Rockies, set up a bar of further progress for many weeks. Tracks and bridges had been swept away, and for seventeen days I was an involuntary, though wholly reconciled prisoner in the beautiful town of Missoula. Perhaps I should not say prisoner, since I was the well-cared for, if not welcome, guest of that great corporation, the Northern Pacific Railroad Company. And thus it was I learned so much of the advantages of a residence in Missoula.

It would be unjust to that recognized quality—Western hospitality—did I not speak of the courtesy extended me by the medical profession of Missoula. While there I had the pleasure of becoming intimately acquainted with Doctors Hanson and Parsons, both physicians of eminence and great surgical ability, and of witnessing the operation of ovariotomy by Dr. Hanson, which was performed in a most skillful manner, and with most gratifying results.

Of my trip further West I shall have something to say in coming issues.

J. R. CLAUSEN, A. M. M. D.

Missoula, Mont., July 21, 1894.

Surgery.

Under the charge of T. H. MANLEY, M. D., 302 W. 53d St., New York.

SPLENECTOMY.

The following is an abstract of M. Terrier's observations on this important subject, delivered at a meeting of the Societe de Chirurgie:

"Last year M. Hartmann showed us a young woman from whom he had removed the spleen on account of serious peritoneal trouble associated with torsion of the pedicle. The patient, who was 18 years old, was suddenly seized with abdominal pain, vomiting, and all the other signs of peritonitis. Born at Reunion, she had there contracted intermittent fever, which only ceased when menstruation commenced. The left side was tender on pressure, and the spleen was much increased in size. The young woman, having come under my observation the very day her peritoneal trouble set in, I requested M. Hartmann to perform immediate laparotomy. The operation took place on the 9th of May, 1893. M. Hartmann found the epiploon very adherent, with a reddish body visible through its texture. While efforts were being made to free the epiploon a considerable quantity of blood flowed. At last it was got out of the way, and the spleen came into view, being adherent to all the neighboring structures. The organ was twisted twice on its pedicle, in the same direction as the hands of a watch. M. Hartmann placed a ligature on the pedicle, removed the spleen and closed the abdomen without performing the peritoneal toilet. The spleen weighed 2190 grammes: the peritoneal fluid when subjected to culture was found to be sterile. The patient recovered after two febrile attacks, which were probably of malarial origin, and since then has remained in perfect health. The blood was examined on several occasions, before and after the operation, and it was found that the red corpuscles were progressively increasing.

When will the profession realize that the "craze for operating," that has seized many physicians, has led them to unsex and mentally destroy numbers of women, more for the sake of figuring as operators than on account of any good that would be done the patient. We know of no cases where Tait's operation was a benefit to the victim, and of many where it was an injury.

—Med. Epitomist.

ASEPTIC SURGERY FOR THE COUNTRY PRACTITIONER.

Dr. James B. Bullitt makes the following observations:

1. Coats and cuffs should be removed, a clean apron or towel fastened over the front; hands and arms are scrubbed in hot soap and water; special care is to be given to the nails; the hands are then rinsed in boiled water or alcohol.

2. The field of operation is rendered aseptic of being thoroughly washed with soap and warm water, and hair being shaved. This is followed by alcohol or ether.

3. Sheets, towels, aprons, etc., can be completely sterilized by being scrubbed and then boiled in a 5 per cent. solution of washing soda.

4. Ordinary cheese or butter-cloth makes an excellent gauze, and can be sterilized by being placed in a steam sterilizer for an hour. It is then put in a jar that has been boiled, and tightly stoppered. Iodoform can be sprinkled over it when needed.

5. The best sponges are cotton-wool tied in butter-cloth and placed for an hour in the steam sterilizer. Sterilized heavy linen makes good substitutes for large flat sponges in abdominal operations.

6. Silk for sutures is sterilized by being boiled for fifteen minutes in the soda solution. It is then dried in the sterilizer and placed in sterilized, stoppered bottles, containing a five per cent. carbolic acid solution.

7. For flushing out a cavity, nothing is better than boiled water, or a physiological saline solution that has been boiled.

—American Practitioner and News.

INTESTINAL OBSTRUCTION DUE TO OBSTRUCTION OF THE BOWEL AFTER APPENDICITIS.

Clinical Society, of London, (Mr. Hulke, F. R. C. S., president).

Dr. L. Brunton and Mr. Cheyne read the notes of the above. The case was a man aet. 35, who had suffered from attacks of appendicitis for some years. Thirteen days before the operation described he was seized with sudden acute griping pain in the abdomen, the attack lasting about an hour and then passing off. Similar attacks occurred at varying but frequent intervals, the bowels being, however, open, though imperfectly. Thirty-six hours before the operation he took a dose of castor oil, which set up intense pain, and was followed by complete obstruction, and about twenty hours afterwards by extreme collapse. About thirty hours after the castor oil he had fecal vomiting, and when put on the table he was practically moribund, and pulse could not be felt. The abdomen was opened, the appendix which encircled the ileo-cecal valve removed, and the adhesions cut and torn through till the contents of the small intestine could be readily squeezed into the large. He lay in a collapsed, almost pulseless condition for about thirty hours after the operation, without vomiting, however, and without any marked pain, and then he had two copious and very offensive stools. After that he was very collapsed, but soon recovered, and when seen thirty-six hours after the operation his pulse had greatly improved. His subsequent recovery was uninterrupted, and he remains well.

ANOTHER CASE OF ACUTE OBSTRUCTION.

Mr. A. Quarry Silcock related the case of a patient, a man, aet. 26, who was admitted to St. Mary's Hospital, on September 26, 1893, suffering from acute intestinal obstruction and peritonitis. The intestines were greatly distended, the abdomen generally being tender, and the vomiting frequent, the ejecta having a fecal odor. He was seen shortly after admission by Dr. Luff, who deemed an exploration necessary. On opening the abdomen in the middle line below the umbilicus a small quantity of turbid serum escaped. The vascularity of the adhesion precluded any systematic search for the possible source of obstruction. The man's condition at this point became so alarming that the operation was abandoned, the wound being hastily stitched up and the man removed to the ward. The next morning he had recovered from the extreme collapse, and he opened up the central part of the wound, and made a small incision into a prominent coil of small intestine, and through this incision he thrust the cannula of a suction trocar furnished with a long indiarubber tube leading to a basin below the bed. This was held in position for four and a half hours by relays of dressers, and a large quantity of fluid intestinal contents came away, to the evident relief of the patient. The vomiting and hiccough ceased, and the pain was reduced. After the withdrawal of the cannula the wound in the intestine was closed, but it subsequently reopened, emitting much fluid intestinal contents. On September 30 he passed a motion per rectum, and by October 9 the intestinal fistula had closed. He was discharged cured on November 8. The patient had had no trouble with his bowels since his discharge.

Dr. Lauder Brunton mentioned that the patient was evidently suffering from impending paralysis of the ingurating centre, and he injected strychnine solution drop by drop until the desired effect was produced.

ABORTIVE TREATMENT OF CORYZA.

Doctor J. Gerard reports good results obtained by the use of inhalations of chloroform in arresting the extension of coryza to bronchial tubes. He at first employed a mixture of carbolic acid and ammonia, but finally replaced by chloroform, which acted much better. The inhalation is to be practiced several times up to the point of the first signs of anesthesia. When this has been done at the time the first nasal symptoms appeared, no further extension of the affection has occurred. In epidemics of coryza and influenza, even in cases where the catarrhal condition was severe, Gerard has seen the disease aborted.

—American Doctor.

Therapeutics.

Under the charge of LOUIS LEWIS, M. R. C. S., Philadelphia.

THE MANUFACTURE OF SCHERING'S CHEMICAL PRODUCTS.

THEIR RELATION TO MEDICINE.

It is possibly of interest to those who have to depend on the efficacy of materia medica to know a little more of the amount of reliance they may put on all the chemical preparations manufactured in the well-known establishment of the Chemische Fabrik auf Aktien, vormals E. Schering, of Berlin. The founder of the firm, the late Mr. E. Schering, was a gentleman of great wisdom and of the highest attainments as a pharmaceutical and scientific chemist. He was originally induced to devote his attention to the manufacture of photographic chemicals at a time when, with the first development of the art of photography, it was felt necessary to have purer chemical products than at that time the crude requirements of materia medica stood in need of. The pharmacopeia then claimed very little indeed in the way of purity, and the pharmaceutical factories troubled themselves very little about perfection.

Schering's project in 1850 was fully alive to the possible higher claims which might, with the progress of science, become a necessity also in pharmacy. He, therefore, from the very beginning of his manufacturing career had decided to supply whatever he would turn out in the highest state of purity and perfection. Fortunately, for himself, he was not a man carried away with success, but the more he accomplished the more he strove to come nearer the superlative of perfection in his products.

He has done more perhaps than anybody to raise the standard of pharmaceutical requirements. His products proved the possibility of greater perfection, and they were successfully put forward as claims on everybody else's preparation. It was Schering's merit to induce the compilers of the German Pharmacopeia to raise the requirements to that high state of purity now in practice.

Had Schering been a manufacturer in England, no doubt, under the influence of his purer preparations, the requirements of the British Pharmacopeia would now be far higher than what they are at present, and indeed what they should be. Our P. B. is, as a matter of fact, less demandful of purity for no other reason than the difficulty of exacting from our home manufacturers higher requirements.

It is no longer the pharmaceutical chemist, but the scientific chemist we need, to attain the required absolute purity of foreign officinal demands. That these higher requirements will become a necessity in our pharmacological text book cannot fail to be a matter of time. Is not the Japanese, and even the French and Dutch pharmacopeia by far more demandful of purity than our own P.B.?

Schering had more than forty years ago foreseen that the then laxity of the purity of materia medica would be a mere matter of time, and he, therefore, incessantly impressed his co-workers with the importance of permitting no product to leave his factory unless it had the characteristics of the most absolute chemical purity, independent of requirements. Very soon he found that even a more stringent control should be exercised in his rapidly extending chemical factory, and for the purpose that at no time there should be any shade of a doubt he drafted into service eminent scientific chemists for the purpose of an independent research laboratory which should in no wise be connected with the factory, but where all products, before being permitted to pass out of the manufacturing chemists' hands into consumption, should be scrupulously examined, and only then receive a pass for the highest standard of purity, and fit to satisfy every pharmacopeia of the world.

There is probably no chemical factory of materia medica in existence where similar constantly searching control is held into every product permitted to go into the hands of the dispenser, as we find in this establishment.

For this very reason it is also in the interest of the profession that the purchase of pure products as much as possible should bear the original Schering's labels and capsules, and should be insisted upon, as they are more than ordinary guaranteed for purity.

The original packing of Schering's will be supplied by all wholesale and retail chemists, if such be desired.

—The Therapist.

Miscellany.

THE GLYCERO-PHOSPHATES.

The "Bulletin Medical" of the 25th April, 1894, contains Dr. A. Robin's interesting paper read at the Academie de Medecine in Paris, relating to the glycero-phosphates and their therapeutic application.

Dr. A. Robin makes the preliminary report of his experience which he has made with the glycero-phosphates, and the conclusions he has arrived at are of no minor importance in a branch of medicine which up to the present has been conspicously poor in therapeutic resources.

His study of neurasthenia had led him to the observation that certain patients eliminate in the urine comparatively large quantities of incompletely oxidized phosphor, which, while all other things in nutrition remained unchanged, seemed to result from exaggerated decomposition of the nerve licithine. It is actually known that the greatest part of incompletely oxidized phosphor in the urine is found in the form of phosphoric acid, and that this body is one of the constituents of licithine, which forms a considerable part of the nervous system.

On the other hand, as medicamentive phosphates eliminate with great difficulty, he conjectured that better results might be obtained when supplying the organism with phosphates in organic combination most adapted to those existing in the nervous system.

Dr. Robin has promised to communicate to the academy at an early date his research and observations over a period of six years, while now he only referred to the principal points of interest.

He has employed glycero-phosphate of lime, soda and potash separately, and combined, either per os or subcutaneously.

The effect of these medicines on nutrition is extremely important. To give only one of his results with glycero-phosphate of lime subcutaneously applied (dose 0.25 grammes), the total residue of urine, urea was increased from 20.5 to 31.73 per cent., the co-efficients of nitrogen oxidation from 80.7 to 84 per cent. the chlorides, the sulphates, the co-efficients of sulphur oxidation from 87 to 90 per cent. lime, magnesia and potash. On uric acid it has apparently no appreciable influence and alters hardly at all the proportion of incompletely oxidized phosphor, but tends rather to lower it.

It benefits, therefore, considerably the nutrition of all the organs, and the author promises to show later on that the cause of this improvement results from the special stimulation of the nervous system. The influence of the salt upon this system is antagonistic to that of antipyrine. Dr. Robin referred here to his communication to the academy in 1887, that antipyrine is the remedy for excessive irritation of the nerves, while the glycero-phosphates are the remedies for nervous depression.

Administration per os produces the same effect, only much less pronounced.

He has, therefore, come to the conclusion that the glycero-phosphates may be advantageously administered in all cases where it is neccessary to stimulate a failing nerve nutrition.

We shall, in our next issue, give more fully the list of cases in which he has effected relief with marked success, more especially in neurasthenia, coupled with a distinct elimination of phosphor incompletely oxidized, in cases of chlorosis torpid, where the nitrogen oxidation was considerably diminished, in albuminaria phosphuria, and in a case of phosphoruria. They appear, therefore, to him indicated in all cases where the nerve activity is enfeebled.

Dr. Robin concludes that:

1—The glycero-phosphates are powerful therapeutic remedies which improve the general nutrition of the nervous system.

2—Their employment is mainly indicated in nervous depression.

3—Subcutaneous injections are in their effect at least equal to those of the testicular fluid, the advantage of which is

probably only to be explained by the organic phosphates it contains. It may, therefore be, that the glycero-phosphates will be employed with advantage in its place, because they will replace an indefinite product by a definite and unalterable drug.

4—The above-mentioned observations give every hope to expect that these injections will be advantageously employed in the treatment of neurasthenia, albuminaria phosphuria, phosphoruria, Addison's disease, of some forms of sciatica and facial tic douloureux. In locomotor ataxia the results are more uncertain, and success seems to limit itself to the diminution of lightning pains.

MUTILATION IN GYNECOLOGY.

In his experience few women had perished from chronic disorders of these organs, even when pus was present. More women died from the radical operation than from the disease itself. Many of these women had been cured by curetting and draining the womb; others he had seen to get well by the use of rest, massage, electricity, alteratives and by local applications, even when they had been sent to his private hospital to have their appendages removed. In a few instances among his own patients this had been followed by conception and pregnancy. If it became absolutely necessary to resort to operation, then, as little as possible of the appendages should be taken away. If the tubes and ovaries were simply adherent, and not otherwise damaged, they should be merely freed from their adhesions. If they were diseased only the unhealthy portions could be exsected. He had found that a small piece of an ovary not larger than a bean was ample enough to maintain intact menstruation and sexual feeling. The aim of modern surgery was conversation, yet the glamor of success in antiseptic surgery had so dazzled the modern gynscologist as to make him a spoiler rather than a conservator.

—From Dr. William Goodell's paper in the Congress of American Physicians, 1894.

Book Notes.

SIR FRANCIS BACON'S CIPHER STORY. DISCOVERED AND DECIPHERED BY ORVILLE W. OWEN, M. D. VOLUME II. HOWARD PUBLISHING COMPANY, DETROIT AND NEW YORK.

A notice of the first part of this remarkable compilation appeared in a former number of this paper. That which chiefly distinguishes the second volume is a picture of the improvised "wheel" used in deciphering Sir Francis Bacon's cipher writings. On a belt of a thousand feet of canvas, passing from one reel to another, are pasted pages of Shakespeare, Marlow, Green, Burton, Peele and Spenser; in what order and by what rule the reader is not yet informed. Neither is he told whether the belt is to be read from end to end or from side to side, up or down or crosswise. All this is promised in a subsequent volume, keeping up our interest like a serial story. Meantime the story itself goes on ingeniously with the relations between Elizabeth and her favorite Dudley, his wooing and wedding in the Tower, and the taking-off of Amy Rotsart, his lawful wife, to gratify the jealous Queen.

Then follows the history of the struggle between Elizabeth and Philip of Spain, in what seems to the reader an irrelevant digression, but as concealment and hoodwinking is asserted to be a large element in the whole story perhaps this is a part of the play. As any unfavorable opinion is regarded as satirical, judgment is hereby suspended until the appearance of volume third. For the benefit of those who wish to compare the only poetry that Bacon is absolutely known to have written with what is here attributed to him, the following version of the first psalm may be taken as a fair sample of several in Volume XIV of his works:

"Who never gave to wicked reed,
A willing and attentive ear;
Who never sinners' paths did tread,
Nor sat him down in scorner's chair;
But maketh it his whole delight
On laws of God to meditate,
And therein spendeth day and night,
That man is in a happy state."

If we put this alongside the prayer of Richmond on the eve of his battle with Richard III we shall be apt to conclude that possibly Shakespeare might have written the works of Bacon, if he had preferred, as Bacon did, scholastic Latin to good English, or stilted prose to noble verse.

L. S.